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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Rainer Karer

LU 6098 (US)

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EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,853	Applicant(s) KARER ET AL.	
	Examiner HUY-TRAM NGUYEN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 6, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/24/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1, 2, 3, and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 7, 9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by **Calvert et al. (US Patent No. 3,876,602)**.

Regarding Claim 1, Calvert et al. reference discloses a method comprising metering discontinuously at least one solid, particulate catalyst and/or process auxiliary into a reactor (5) containing a fluidized bed (11) of particles in an at least partly gaseous medium, at prescribed time intervals into the fluidized bed (11) at at least one metering point (10), wherein a first fluid stream is in each case introduced into the reactor (5) so

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that a region having a reduced particle density is formed in the fluidized bed (11) around the at least one metering point (10) and the at least one solid, particulate catalyst and/or process auxiliary is subsequently metered into the region having a reduced particle density **(Column 6, Lines 12-50 and the gaseous material entering the cylindrical cavity to convey the catalyst into the reaction spaces under pressure, the region where the catalyst entering the reactor (i.e. the claimed metering point) inherently has a reduced particle density).**

Regarding Claim 2, Calvert et al. reference discloses the method as claimed in claim 1, wherein the first fluid stream is a gas stream **(Column 6, Lines 37-40 – gaseous material).**

Regarding Claim 7, Calvert et al. reference discloses the method as claimed in claim 1, wherein the first fluid stream is introduced continuously **(Column 6, Lines 47-50).**

Regarding Claim 9, Calvert et al. reference discloses the method as claimed in claim 1, wherein the first fluid stream is formed by at least one inert gas selected from the group consisting of C₂-C₃-alkanes and N₂ **(Column 7, Lines 49-52 – Nitrogen).**

Regarding Claim 11, Calvert et al. reference discloses the method as claimed in claim 1, wherein the catalyst is introduced into the reactor (5) by means of the first fluid stream **(Abstract).**

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 4-5, 8, 10 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Calvert et al. (US Patent No. 3,876,602)**

Regarding Claim 4, Calvert et al. reference discloses the method as claimed in claim 1 except for the region having a reduced particle density has a particle density of less than 0.1 g/cm^3 . It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the claimed method to have the region with

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a reduced particle density of less than 0.1 g/cm^3 , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 5, Calvert et al. reference discloses the method as claimed in claim 4 except for the region having a reduced particle density is substantially free of particles. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the claimed method to have the region with a reduced particle density being substantially free of particles, since predetermined amounts of catalyst solids being delivered to the reactor discontinuously using the metering means when the gaseous material being supplied into the capillary tube continuously, the particle density is substantially free of particles when all the solid catalysts being conveyed into the reactor.

Regarding Claim 8, Calvert et al. reference discloses the method as claimed in claim 1 including the at least one solid, particulate catalyst is a free-flowing catalyst suitable for the polymerization of olefin. However, Calvert et al. does not disclose that the olefin is an alpha olefin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the polymerization process with the alpha olefin, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding Claim 10, Calvert et al. reference discloses the method as claimed in claim 1 including the catalyst is introduced at a distance (x) from an interior wall (9) of

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the reactor (5). However, Calvert et al. reference does not specify the distance (x) to be at least 1 cm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed distance of metering point from the interior wall of the reactor, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 14, Calvert et al. reference discloses a continuous polymerization process for preparing homopolymers and copolymers, comprising polymerizing the monomers/olefins at from 30 to 150°C and a pressure of from 0.5 to 6 MPa (**Column 7, Lines 24-39 and Column 8, Lines 3-12 – operating temperature from 90°C to about 110°C and a pressure of from 0.28 to 2 MPa**) in the presence of at least one solid, particulate catalyst in a gas-phase fluidized-bed reactor (5) containing a fluidized bed (11) of finely divided polymer, wherein a method for metering the at least one solid, particulate catalyst and/or process auxiliary into the reactor (5) containing the fluidized bed (11) of particles in an at least partly gaseous medium is employed, the method comprising metering discontinuously the at least one solid, particulate catalyst and/or process auxiliary at prescribed time intervals into the fluidized bed (11) at at least one metering point (10), wherein a first fluid stream is in each case introduced into the reactor (5) so that a region having a reduced particle density is formed in the fluidized bed (11) around the at least one metering point (10) and the at least one solid, particulate catalyst and/or process auxiliary or auxiliaries are subsequently metered into the region having a reduced particle density (**Column 6, Lines 12-50 and the gaseous**

material entering the cylindrical cavity to convey the catalyst into the reaction spaces under pressure, the region where the catalyst entering the reactor (i.e. the claimed metering point) inherently has a reduced particle density).

Calvert et al. does not specify the exact monomers being used. Calvert et al. also discloses that any polymerizable olefin can be employed in Calvert et al. invention **(Column 7, Lines 29-30)**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed monomers, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding Claim 15, Calvert et al. reference discloses an apparatus for carrying out a method of metering at least one solid particulate catalyst and/or process auxiliary, the apparatus comprising:

(i) a gas-phase fluidized-bed reactor (5) containing a fluidized bed (11) of particles in a reactor gas, where the reactor (5) has a wall (9) which is arranged essentially parallel to the flow direction of the reactor gas and bounds the fluidized bed **(Abstract and Figure 1, numerals 15 – reaction vessel, 42 – reaction wall);**

(ii) at least one reservoir unit (1 a) for storing the at least one solid, particulate catalyst and/or process auxiliary **(Figure 1, numeral 10 – reservoir);**

(iii) a portioning unit (1b) for providing portions of the at least one solid, particulate catalyst and/or process auxiliary in a prescribed amount, which is connected

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to the at least one reservoir unit (1 a) by a first connecting line (7a) (**Figures 1, 2 and 3 and numeral 28- through port**);

(iv) a valve unit (1c) for introducing the portions of the at least one solid, particulate catalyst and/or process auxiliary into the fluidized bed of the reactor (5) at at least one first metering point (10), where the valve unit (1c) is connected to the portioning unit (1b) by a second connecting line (7b) and is connected to the reactor (5) at the at least one first metering point (10) (Figure 1 and Figure 2, numeral 26 – metering disc and numeral 14 - capillary tube); and

(v) a fluid feed line (8a, 8b) through which a fluid, can be fed to the reservoir unit (1a) and the second connecting line (7b) (**Figure 1, numeral 16a – gaseous material**);

Calvert et al. reference also discloses the catalyst being introduced at a distance (x) from an interior wall of the reactor. However, Calvert et al. reference does not specify the distance (x) to be at least 1 cm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed distance of metering point from the interior wall of the reactor, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 16, Calvert et al. reference discloses the apparatus as claimed in claim 15 except for the at least one first metering point (10) is at a distance of from 2 to 100 cm from the wall (9) of the reactor (5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed distance of metering point from the interior wall of the reactor, since it has been held that where the

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general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 17, Calvert et al. reference discloses the apparatus as claimed in claim 15, wherein at least one second metering point (12) for a fluid stream is provided essentially in the form of an annulus around the at least one first metering point (10) for the solid, particulate catalyst and/or process auxiliary (**Figure 5, numerals 44 – annular passage and 46 – gas inlet such as ethylene or other gas**).

Regarding Claim 18, Calvert et al. reference discloses the method as claimed in claim 4 except for the region having the reduced particle density has a particle density less than 0.01 g/cm^3 . It would have been obvious to one having ordinary skill in the art at the time the invention was made to operate the claimed method to have the region with a reduced particle density of less than 0.1 g/cm^3 , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 19, Calvert et al. reference discloses the apparatus of claim 15, wherein the fluid fed through the feed line (8a, 8b) is an inert gas (**Column 7, Lines 49-52 – Nitrogen**).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Calvert et al. (US Patent No. 3,876,602) in view of Hogan (US Patent No. 5,026,795)**.

Regarding Claim 3, Calvert et al. reference discloses the method as claimed in claim 1 except for the first fluid stream is a liquid stream that vaporizes under the

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conditions prevailing in the reactor (5). Hogan reference discloses a liquid carrier that vaporizes under the gas phase polymerization reaction. It would have been obvious to one having ordinary skill in the art at the time the invention was made to the liquid carrier as taught by Hogan, since Hogan reference states at Abstract that such a modification would be used to add an antistatic agent to the polymerization process which can substantially reduce and prevent adherence of the polymer and/or copolymer particles to the walls of the reactor and to reduce the tendency of the polymer and/or copolymer particles to agglomerate.

Allowable Subject Matter

8. Claims 6, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 6, Calvert et al. reference discloses the method as claimed in claim 1 except for the first fluid stream is introduced discontinuously for a period of from 0.5 to 60 s and the catalyst is metered in after a delay of from 0.5 to 3 s after commencement of the introduction of the first fluid stream. Calvert et al. reference discloses the steps of metering catalyst into the capillary tube before the first fluid stream being introduced.

Regarding Claim 12, Calvert et al. reference discloses the method as claimed in claim 1 except for the step of introducing the catalyst at the at least one metering point

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(10) with the aid of a second fluid stream and introducing the first fluid stream into the reactor essentially concentrically around the at least one metering point for the catalyst.

There is no motivation/suggestion to modify the method of Calvert et al. with these steps. Calvert et al. reference discloses a step for introducing a second fluid (46) into the annular passage (44) surrounding the capillary tube (14) to prevent migration of catalyst and/or product into the passage 44.

Claim 13 is a dependent claim of claim 12.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
9/8/08

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797